

## APPENDIX G - OTHER ISSUES

Other Issues are issues that were considered, but will not be carried forward in detailed analysis within the EIS. Some of these issues may be addressed through common design features, Forest Plan requirements, laws, and/or regulations. Some Other issues may be outside the scope of the analysis. Rationale as to why the issue was not analyzed in detail is available in the project file and in some cases, information will be included as appendices to the EIS. The section in Chapter 2 entitled Actions or Alternatives Considered but Not Given Detailed Study provides additional information on the disposition of some Other Issues. The Forest Supervisor's approval of those issues and alternatives to be analyzed in detail was given April 16, 2002 (USDA Forest Service, *Issue and Alternative Approval Document Benchmarks 5 and 6*, 2002). Following are those issues, which were raised by the public or Forest personnel that were considered but have been determined to be Other Issues for this analysis.

### GEOLOGY AND SOILS

#### **Soil Productivity**

*Other Issue - Implementation of proposed timber harvest and associated activities might affect soil productivity:*

Soil productivity is addressed through implementation of design features that provide for maintenance of large woody debris in accordance with Forest plan recommendations and current science (USDA Forest Service, 1994. Graham, R.T., et al. *Managing Coarse Woody Debris in Forests of the Rocky Mountains*, INT-RP-477, Intermountain Research Station). It is also addressed within the analysis presented in the Forest Vegetation and Watershed sections of the DEIS. Best Management Practices (BMP) and Soil and Water Conservation Practices (SWCP) will be implemented to protect soil from erosion, compaction, and other factors that could reduce soil productivity. No impacts to soil productivity are expected through implementation of proposed projects.

#### **Geology, Land Stability, and Minerals**

*Other Issue – Geologic features, land stability, or minerals may be affected by the proposed projects:*

There are no mining claims or unique geologic features of concern within the project area (USDA Forest Service, 2001. Harber, Dale. Personal communication, e-mail, 6 April). A survey of the area was conducted to identify areas of instability. No areas of concern were identified (USDA Forest Service, 2001. Harber, Dale. Memo: Land Stability in the Monticello-Blanding Watershed Improvement Area, 28 June). Land stability will be protected through implementation of design features that include requirements to implement Best Management Practices and additional measures in road construction and water system construction, as well as erosion control measures in other areas of disturbance. Proposed projects will not impact geologic features, land stability, mining claims, or mineral resources.

## CULTURAL RESOURCES

### Historic or Prehistoric Resources

*Other Issue – Cultural resources may be affected by the proposed projects:*

Cultural resource surveys have been completed for the proposed projects. Design features for the management and protection of cultural resources have been included in the alternatives (see Appendix A).

Eligible sites will be avoided during timber harvest and road construction activities; therefore, there will be no effect to these sites. SHPO has been consulted and has concurred with the determination of “No Historic Properties Affected” for these activities.

The existing water system was recorded as a Historic District, but was determined to be ineligible for inclusion to the National Historic Register. SHPO consultation has been completed and concurrence with the determination of “No Historic Properties Affected” obtained. Historic and prehistoric resources will not be affected by the proposed action. Inventory and SHPO consultation records are available in the planning record. (See USDA Forest Service, 2003. Donald C. Irwin. Report: *Summary of Monticello City Water Improvement Project – Cultural Resources*, 16 January.)

## WILD AND SCENIC RIVERS

### Protection of Designated or Eligible Streams

*Other Issue – streams designated or eligible as Wild and Scenic Rivers could be impacted by proposed actions:*

An inventory was recently conducted of stream channels within the Monticello Ranger District to identify those that may be eligible for designation under the Wild and Scenic Rivers Act. No stream channels within the project area have been identified as eligible. There are no designated streams/rivers within the project area that could be affected by the proposed activities (USDA Forest Service, 2002. Ann King. Personal communication, e-mail. 5 November). A map of the inventory and eligible streams are available in the planning record (USDA Forest Service, 2002. Map (draft): *Wild & Scenic Rivers Eligibility Inventory Eligible Stream Segments Monticello District*. 10 September). No designated or eligible streams would be impacted by proposed projects.

## INVENTORIED ROADLESS AREAS

*Other Issue - If conducted within inventoried Roadless areas, logging, road construction, and water system construction could affect Inventoried Roadless Area values:*

A map of the inventoried Roadless Areas within the project area is included in the planning record (USDA Forest Service, 2002. Map: *Inventoried Roadless Area – Blue Mountain*. 12 December). Activities proposed will not be conducted within the Blue Mountain Inventoried Roadless Area. No Inventoried Roadless Area will be affected. There are no regulations that restrict any of the activities proposed in the action alternatives within areas adjacent to Inventoried Roadless Areas.

## **WILDERNESS**

*Other Issue – Wilderness or potential Wilderness may be affected by proposed projects:*

No designated wilderness areas are located within or adjacent to the project area. No proposed wilderness areas lie within the project boundary. Affects on wilderness are outside the scope of this analysis.

## **VEGETATION RESOURCES**

### **Noxious and Invasive Weeds**

*Other Issue - Increased travel from water system reconstruction, timber harvest, and recreation activities can introduce and distribute the seed of noxious weeds:*

Ground disturbance areas, such as landings and road shoulders provide suitable habitat for many weed species. Most of the noxious weeds are very aggressive and tend to dominate over natural vegetation for use of the habitat. Design features are included in the alternatives considered which include implementation of monitoring and a control program to be implemented if noxious weeds are identified within the project area. An inventory of noxious weeds within the project area (USDA Forest Service 2001. Forrest, Jimmie. 2210 letter: *Noxious Weed Management in the Monticello and Blanding Watershed Improvement Project Area*. 16 January.), a copy of the *Environmental Assessment for Control of Noxious Weeds Found on the La Sal Division Manti-La Sal National Forest* (USDA Forest Service 1993. *Environmental Assessment for Control of Noxious Weeds Found on the La Sal Division Manti-La Sal National Forest*.), and a copy of the Decision Notice and Finding of No Significant Impact (USDA Forest Service 1993. Morris, George A. *Decision Notice and Finding of No Significant Impact for Control of Noxious Weeds Found on the La Sal Division of the Manti-La Sal National Forest*. 25 May.) that addresses the environmental effects of weed control are included in the planning record.

### **Range Management**

*Other Issue - Implementation of proposed activities have potential to affect livestock, range improvements/structures, or available water for livestock and wildlife:*

An inventory of improvements and an analysis of grazing and effects of the proposed actions are available in the planning record (USDA Forest Service 2002. Forrest, Jimmie L. 2210/1950 letter and maps: *Monticello & Blanding Municipal Watershed Improvement Projects EIS – Range Use Within the Municipal Watershed Boundary*. 13 May). The limited amount of aspen regeneration treatment and protection within permitted grazing areas should not impact numbers. There is potential for short-term disruption of livestock movement patterns during reconstruction of the water system, timber harvest, and temporary displacement in areas fenced to protect aspen regeneration, but these effects will be limited in scope or will be short duration. Design features have been incorporated in the DEIS that require protection of rangeland improvements during project implementation. The City of Monticello will be required to provide water to tanks/troughs that would otherwise be lost due to reconstruction and realignment of the existing water system. Water would continue to be available in areas where improvements currently exist for livestock and wildlife use. There will be no substantive disruption of grazing or negative impacts that would impact livestock use.

### **Threatened or Endangered Plants**

*Other Issue - Implementation of proposed activities may affect Threatened or Endangered plant populations:*

These species have been considered. No threatened or endangered plants have been identified within the project area that would be impacted by proposed projects. See Specifically Required Disclosures (Threatened and Endangered Species) and the M-B Watershed Specialist's Report – Wildlife & Plants in the planning record (USDA Forest Service 2003. Musclow, Heather and Smith, Barbara. *M-B Watershed Specialist's Report – Wildlife & Plants*. January) for detailed information and references.

### **Sensitive Plants**

*Other Issue - Implementation of proposed activities may affect populations of Sensitive plants and other plant species of special interest:*

These species have been inventoried and considered. The northern goshawk and three-toed woodpecker have been analyzed in detail in the DEIS. The M-B Watershed Specialist's Report – Wildlife & Plants in the planning record (USDA Forest Service 2003. Musclow, Heather and Smith, Barbara. *M-B Watershed Specialist's Report – Wildlife & Plants*. January) provides detailed information and references for each species. A summary of information regarding other sensitive and special interest species and potential effects follows:

#### **Boreal Rockjasmine - Sensitive**

This plant occurs on the high alpine rocky ridges on the high peaks of the LaSal Mountains at elevations of about 11,000 feet.

The proposed projects will not disturb individual plants or suitable habitat for boreal rockjasmine. Conclusion: No impact.

#### **LaSal Daisy - Sensitive**

This plant is found on open alpine forb-grass-sedge vegetative types at high elevations on the La Sal Mountains. Plants are scattered and intermixed with the alpine vegetation. They seem to prefer sites with some disturbance or open exposed soil. They occur at elevations between 10,000 to 12,000 ft.

The proposed projects will not disturb individual plants or suitable habitat for LaSal Daisy. Conclusion: No impact.

#### **Canyonlands lomatium - Sensitive**

One small population of this plant is known to occur near the Forest in the Meloy Park area on the northwest part of the Moab district. It is confined to sandstone outcrops in pinyon/juniper and mixed mountain brush vegetation types at elevations near 7,000 feet. Canyonlands lomatium is found on the Monticello district in lower Dark Canyon at 4,800-6,855 feet in pinyon/juniper and desert shrub communities on Entrada sandstone.

The proposed projects will not disturb individual plants or suitable habitat for Canyonlands lomatium. Conclusion: No impact.

**Kachina daisy - Sensitive**

This daisy occurs on the Monticello district in seeps and hanging gardens on Mossback and Navajo sandstone formations and in moist pockets in ponderosa pine habitat types at elevations of 7,000 to 8,000 feet. It has been found in widely scattered locations on the Monticello district. No impact is expected to occur to this species since its occurrence and/or appropriate habitat would be avoided for projects covered under this BA/BE. The proposed projects will not disturb individual plants or suitable habitat for Kachina daisy. Conclusion: No impact.

**Pinnate spring-parsley - Sensitive**

The habitat for this plant is characterized as sandy soils weathered from Navajo sandstone and on slickrock ledges and cracks. It is generally in association with ponderosa pine/manzanita and oakbrush/snowberry community types. Populations have been located on Elk Ridge in Cliff Dwellers Pasture, the Causeway, and Chippean Rocks areas. The proposed projects will not disturb individual plants or suitable habitat for pinnate spring-parsley. Conclusion: No impact.

**Chatterley onion - Sensitive**

This plant is found in pinyon/juniper and ponderosa pine areas where there are open, shallow, fine-textured sandy loam soil and rock outcrops. It has been found in the Chippean Rocks, Little Dry Mesa, and Harts Draw areas. The proposed projects will not disturb individual plants or suitable habitat for Chatterley onion. Conclusion: No impact.

**Abajo daisy - Sensitive**

While this species may occur from an elevation of 7,000 to 11,320 feet in ponderosa pine, pinyon/juniper and spruce/fir types in scattered locations in southeastern Utah (Welch et al. 1993), on the Monticello district it has been located only on the open rocky ridge tops of the Abajo Mountains.

Three individual Erigerons that are likely the species *abajoensis* were located within the project area during surveys. They were located in 2001 and 2002 in a grass/forb community on a south-facing slope. There are no known conflicts with the specified rock sources and sensitive plant species. Conclusion: May impact.

**La Sal Groundsel – Special Interest**

La Sal groundsel (*Senecio dimorphophyllus* var. *intermedius*) is a plant restricted, in Utah, to the La Sal Mountains. It is not on the current R4 Sensitive Species list, but it is considered "rare" by the state of Utah. This plant is found in meadows that are wet in the early part of the season and then dry up. These meadows consist of sedge-hair grass and iris communities between 9,000 and

10,500 feet in elevation. The La Sal groundsel is considered to be a desirable species for this community and a fair forage plant.

The proposed projects will not disturb individual plants or suitable habitat for La Sal Groundsel. Conclusion: No impact.

**Spineless hedgehog cactus – Special Interest**

Spineless hedgehog-cactus (Echinocereus triglochidiatus var. inermis) is found in the pinyon/juniper, yucca-black sage vegetative type that occurs at lower elevation (5,000-7,000 ft.) foothills on the west slope of the La Sal Mountains. This variety was previously listed as Endangered by the USFWS, but was delisted and reduced to non-candidate status in 1993 due to expansion of the known range and taxonomic problems.

The proposed projects will not disturb individual plants or suitable habitat for spineless hedgehog-cactus. Conclusion: No impact.

**Lady Slipper Orchid**

We want to make a distinction between “Brownie Lady Slipper” (Cypripedium fasciculatum) and “Fairy Slipper” (Calypso bulbosa). The Brownie Lady Slipper Orchid is located in the Uinta Mountains and is listed for Region 4, Forest Service, as “sensitive”. This species has not been located in southeast Utah. The Fairy Slipper is found worldwide with only a few plants at any one location. This species is found both in the Uinta Mountains and on the Abajo Mountains in spruce/fir/aspen at elevations between 8,500-9,500 feet. It is located at the head of Indian Creek and below the tunnel in the watershed. Both areas are within the project area. Individuals or groups of plants may be impacted but the project will not affect the viability of the species. This species is not listed with the US Forest Service or the Fish and Wildlife Service as a species of concern.

**Threatened or Endangered Aquatic Species**

*Other Issue - Implementation of proposed activities may affect Threatened or Endangered fish or other aquatic species:*

These species have been considered. No threatened or endangered fish or other aquatic species have been identified within the project area that would be impacted by proposed projects. See Specifically Required Disclosures (Threatened and Endangered Species) and the M-B Watershed Specialist’s Report – Wildlife & Plants in the planning record (USDA Forest Service 2003. Musclove, Heather and Smith, Barbara. *M-B Watershed Specialist’s Report – Wildlife & Plants*. January) for detailed information and references).

**Sensitive Aquatic Species and Species of Special Interest**

*Other Issue - Implementation of proposed activities, insects, or fire may affect Colorado Cutthroat Trout populations, other Sensitive aquatic species, or species of special interest (including MIS):*

These species have been inventoried and considered. The M-B Watershed Specialist’s Report – Wildlife & Plants in the planning record (USDA Forest Service 2003. Musclove,

Heather and Smith, Barbara. *M-B Watershed Specialist's Report – Wildlife & Plants*. January.) provides detailed information and references for each species. A summary of information regarding these other sensitive and special interest species and potential effects follows:

**Colorado Cutthroat Trout - Sensitive**

Colorado cutthroat trout require cool, clear water and well-vegetated streambanks for cover and bank stability. Instream cover, in the form of deep pools and structures such as boulders and logs, is also important. This subspecies is adapted to relatively cold water and prospers at high elevations. It is limited by habitat alteration from grazing, logging, mining, and water diversions for irrigation as well as loss of genetic purity from hybridization with introduced non-native trout (USFS, Spahr et al. 1991).

A Conservation Agreement for preservation and enhancement of native Colorado cutthroat trout within Utah was finalized in March 1997. The Colorado cutthroat trout has been located in Indian Creek on the Monticello District, though not considered a pure strain. This species of fish has been located in other streams on the La Sal Mountains, in the Uintas, Boulder Mountain, and several streams in the state of Colorado. Several of these locations do not contain pure strains of this species. It is also thought that two different "forms" of this species may exist. Rob Davies, USFS Fishery Biologist in 2000-2001 surveyed Indian Creek for Colorado Cutthroat trout and Reported that "They are the only remnant population on the Monticello District and although they are not a pure strain, should be managed under the Conservation Agreement".

The primary past action that has directly affected this species is the placement of ditches and the dewatering of portions of streams. Some analysis has occurred on restructuring streams and ditches to promote a more connective system for this species. This is only in its initial planning stage. Surveys of other streams on the Moab and Monticello district continue, in search of cutthroat populations and/or suitable habitat (UDWR 2000 and 2001 reports).

Maintaining BMPs and SWCPs during project implementation will maintain the habitat of the Colorado Cutthroat trout. Sedimentation from ground disturbance would be short-term and would be mitigated by established practices that include construction of erosion control structures, decommissioning of some roads, and seeding of landings, skid trails, and temporary roads to reestablish vegetation. Conclusion: No impact.

**Spotted Frog - Sensitive**

The spotted frog ranges from Alaska south to scattered areas in northern Utah. They are most likely found near permanent water such as marshy edges of ponds or lakes, in algae-grown overflow pools of streams or near springs with emergent vegetation during the breeding period. The habitat range for this species does not extend to southern Utah. Therefore, no surveys for spotted frogs have been conducted on the Moab/Monticello Ranger District.

The spotted frog or its habitat will not be affected by this project.  
Conclusion: No impact.

**Macroinvertebrates - MIS**

Benthic macroinvertebrates are organisms that dwell on stream bottoms, such as aquatic insects, mollusks, and worms. They live in, on, or near streambeds; have relatively long life cycles; and are relatively stationary in their larval stages. They are sensitive to both natural and human disturbances and are easy to sample, making them a good indicator of long-term site-specific water quality, sediment, and overall stream health.

Indices are numeric values calculated from a single sample in the laboratory and are used to assess water quality and stream health. The *Forest Plan* identifies three indices, each of which has a specific Standard. They are Biotic Condition Index, Standing Crop, and Diversity Index.

Information documenting macroinvertebrate surveys and analysis is available in the Watershed Issue section of the DEIS and in the planning record. Analysis indicates that if proposed actions are implemented some sedimentation may occur in Indian and North creeks as a result of soil disturbance in the upper benches of the watershed but it would be unlikely. The removal of trees, reconstruction of the pipeline, road improvement, and associated soil disturbance and exposure may result in sediments reaching the creek following heavy intense summer thunderstorms or spring run-off. However, with Best Management Practices employed, impacts are not expected. Helicopter logging in remote areas would minimize ground disturbance by reducing the need for temporary road construction. This concern would likely be short term. As sunlight begins to hit the forest floor, ground vegetation would sprout. In the long run, bringing vegetation back to the forest floor would likely improve watershed conditions over the current no action situation. This would be particularly true in the regeneration of aspen woodlands. The reduction of fire hazard as a result of this alternative would minimize the risk of sediment reaching streams.

Gully and sheet erosion are the erosion mechanisms of concern (Cirrus, 2001). The implementation of soil and water conservation practices



(SWCPs) described in the DEIS in the Municipal Watershed section will minimize the possible effects of activities occurring on soils with very high, high, or moderate levels of concern. When these practices are fully and properly implemented, they are very effective in minimizing on-site erosion and off-site sedimentation. Implementation is typically good for timber sale operation and road and pipeline reconstruction. Inspection by timber sale administrators, engineering representations, and other technical specialists is important in ensuring proper implementation. Implementation of Alternatives B or C would not increase soil erosion or adversely affect soil resources in the long-term.

Several stream segments in the project are sensitive to direct disturbance. However, implementation of SWCPs described in the DEIS will minimize the possible effects of activities proposed in the action alternatives. Some of the practices prohibit activities within a specified distance of the stream channel; avoidance is very effective. The practices controlling operations adjacent to the stream network are effective in minimizing disturbance when fully and properly implemented. Implementation is typically good for timber sale operation and road and pipeline reconstruction. Reconstruction of FR 50079 and of Monticello City's water facilities will necessitate some disturbance in stream channels, approximately 20 acres of construction activities in the stream network at approximately 20 locations. Effectiveness of practices to minimize the effects of this type of disturbance is fair to good and the effects would be short-term and of limited extent. Inspection by timber sale administrators, engineering representations, and other technical specialists is important in ensuring proper implementation. Implementation of alternatives analyzed will not result in impacts to macroinvertebrate populations or habitat through implementation of BMPs and SWCPs. Conclusion: No impact.

## **WILDLIFE RESOURCES**

### **Threatened or Endangered Wildlife Species**

*Other Issue - Implementation of proposed activities may affect Threatened or Endangered wildlife species:*

These species have been considered. No threatened or endangered wildlife species have been identified within the project area that will be impacted by proposed projects. See Specifically Required Disclosures (Threatened and Endangered Species) and the M-B Watershed Specialist's Report – Wildlife & Plants in the planning record (USDA Forest Service 2003. Musclow, Heather and Smith, Barbara. *M-B Watershed Specialist's Report – Wildlife & Plants*. January) for detailed information and references.

### **Sensitive Wildlife Species**

*Other Issue - Implementation of proposed activities may affect flammulated owl, Townsend's big-eared bat, and spotted bat (Region 4 Sensitive species) populations:*  
These species have been inventoried and considered. The M-B Watershed Specialist's Report – Wildlife & Plants in the planning record (USDA Forest Service 2003. Musclow,

Heather and Smith, Barbara. *M-B Watershed Specialist's Report – Wildlife & Plants*. January.) provides detailed information and references for each species. A summary of information regarding these other sensitive and special interest species and potential effects follows:

**American Peregrine Falcon - Sensitive**

Peregrine falcons occupy a wide range of habitats, utilizing open country near rivers, marshes and coasts. They prey on a variety of birds, including shorebirds, waterfowl and grouse, usually while in flight. Some peregrines migrate, but with an adequate food supply, some remain on breeding territories through the winter. Courtship and breeding activity begin in February. Although still considered rare, these birds have become much more abundant throughout their range in recent years. By August 1999, the peregrine falcon had recovered to the point that it was removed from the Federal endangered species list.

Suitable nesting areas in southeastern Utah consist of sheer cliffs with associated canyon riparian areas for foraging. Peregrine falcons have been located nesting on the Monticello portion of the district. Projects under this analysis would not occur within ½ mile of a known nest during the nesting season (February 1-August 31). The habitat where this species occurs is not found within the project boundary and therefore no effect on peregrine falcons is expected. Conclusion: No impact.

**Flammulated Owl**

This small, insectivorous owl, a Neotropical migrant, inhabits mature mixed pine, aspen and second growth ponderosa pine forests in the west. Nearly all nest sites in this region occur in mature or old growth stands of ponderosa pine and Douglas fir. As secondary cavity nesters, flammulated owls depend on holes excavated by large woodpeckers, generally in large diameter (>20" dbh) trees. They also nest in aspen, which may be a function of the availability of woodpecker holes excavated in this tree species. Pinyon/juniper may be used as nesting and foraging habitat on the Colorado Plateau (Romin and Muck 1999, Hayward and Verner 1994). The nesting period for flammulated owls is April 1-July 31. Vegetative structure, rather than plant species composition, may be the most important habitat factor to these owls (Hayward and Verner 1994). They hunt their insect prey (moths, beetles, caterpillars and crickets) by aerial pursuit or gleaning of foliage. They tend to avoid young dense tree stands where hunting is difficult.

Several studies have occurred on the Moab/Monticello district, resulting in numerous site locations for flammulated owls. The Mexican Spotted Owl study that ran from 1990-1995 resulted in flammulated owl responses at 115 locations. The project area was surveyed during 1990-1991 and 5 flammulated owl responses were found each year. Another study on South Elk Ridge on the Monticello portion of the district resulted in 25 flammulated owl responses from 54 calling stations. Each response may not indicate a new owl.

Loss of large trees from silviculture treatment, road improvements, and pipeline construction would remove nest and roost trees, while at the same time opening the forest floor and adding vegetation diversity and prey availability. There are design features (see Appendix A) for retaining snags that would reduce impacts to this species. The risk of large extensive fires and associated habitat loss would be reduced. Noise disturbance from road, pipeline, or vegetation treatment activities, if performed during the breeding season (April 1-September 30), could cause disturbance and or nest abandonment. The construction of temporary roads and improvements to the main road may result in an increase in forest visitors. Although this alternative includes the closure of roads, the improvement to FR #50079 would negate benefits of reduced road densities. Maintaining forest health while providing for large diameter trees and reducing the risk of extensive bug kills and/or wildfires would provide for this species in the long term. This benefit added to the fact that road densities would be reduced (as per recommendation from roads analysis) plus the absence of recreational camping in the watershed, results in greater long-term benefits for this species.

Conclusion: The proposed projects may impact individual flammulated owls or their habitat, but would not likely contribute to a trend towards federal listing or loss of population viability.

### **Boreal Owl**

The range of the boreal owl is primarily Canada, Alaska and the northwest United States, however it does extend down into the northern most counties of Utah. It winters throughout its breeding range, but some migrate south. Potential sightings have occurred in mountainous areas of Colorado. Boreal owls are closely associated with high elevation mature spruce-fir forests due to their dependence on this forest type for foraging year round. Nesting habitat structure consists of forests with a relatively high density of large trees, open understory, and multi-layered canopy. Owls nest in cavities excavated by large woodpeckers in mixed spruce/fir, aspen, Douglas-fir and spruce-fir habitat types. Eggs are laid in the spring with an average clutch size of five. They are incubated for approximately one month with young fledging about four weeks later. In summer, owls roost in cool spruce-fir stands. Boreal owls are nocturnal, primarily eating small mammals and some birds and insects.

The Boreal Owl is currently not known to occupy the Manti-La Sal National Forest. A few owls have been located on the neighboring Uncompahgre, Grand Mesa, and Gunnison National Forests in Colorado as a result of a nesting survey. They have also been located in northern Utah. A nest box survey has been conducted since 1995 on the Moab portion of the Moab/Monticello District with no boreal owls located to date.

No boreal owls have been sighted on the Monticello District. They do prefer spruce/fir habitat types near tree line that can occur within the project area.

However, nearby nest box surveys show no evidence that their range includes the mountain islands of southeast Utah. Conclusion: No impact.

### **Spotted Bat**

These bats occur in a variety of habitat types including open ponderosa pine, desert scrub, pinyon/juniper, and agricultural land. They roost singly in rock crevices high on steep cliff faces, and may be limited by suitable roosting sites. Their apparent preference for relatively remote, undisturbed areas suggests sensitivity to human disturbance, particularly at the roost. The preferred food of spotted bats appears to be moths, though they also eat beetles, katydids, and grasshoppers. Spotted bats usually take prey in flight but ground feeding also occurs (CDW 1984). Bats are long-lived, slowly reproducing animals adapted to a relatively stable environment.

On the Monticello District, spotted bats have been located foraging in ponderosa pine community types, selecting for areas with open (0-25%) canopy cover, 200-300 m from water and 2500-2600 m in elevation (Toone 1992). Spotted bat activity was in proportion to the availability of cliff habitat along the survey routes. Spotted bats were also detected in pinyon/juniper types at elevations of 2340-2540m (Toone 1992 and 1994). Spotted bats have been documented below the Forest boundary in Natural Bridges National Monument (Ramotnik and Bogan 1995) and lactating females were captured in the Needles section of Canyonlands National Park (Armstrong 1979). Conclusion: No impact. See Townsend's bat below for a summary of effects.

### **Townsend's Bat**

The Townsend's or western big-eared bat occurs in a variety of habitats including pinyon/juniper, shrub steppe grasslands, deciduous forests, and mixed spruce/fir forests from sea level to 10,000 feet elevation. This bat roosts in cool places such as caves, rock fissures, mines, and buildings. They hibernate colonially in mines and caves, and females gather in spring and summer maternity colonies. Temperature is a critical factor in site selection. Highly sensitive to human disturbance, Townsend's big-eared bat will abandon roosts when disturbed. Moths are the preferred prey, and their diet may be over 90% moths (Idaho State 1995). A foraging activity study of these bats in Nevada found they foraged almost exclusively in forested habitats, preferring pinyon/sagebrush (60% of activity) and pinyon/juniper (21%) to the dominant sagebrush, salt desert shrub, and riparian wetland habitats (Bradley 1995).

This species has not been detected on the La Sal Mountains in the few formal bat surveys on the Moab/Monticello district. A Townsend's big-eared bat was detected during surveys of inactive mines on the southeast side of Elk Ridge on the Monticello district (Perkins and Patterson 1996). The leading factor contributing to population declines in bats (including spotted and Townsend's big-eared) is loss and/or disturbance of roosting habitat. Loss and/or degradation of foraging habitat may also contribute to population declines for this bat.

Water seepage from the pipeline would be reduced because of increased efficiency in the system. This would reduce potential foraging areas where moths congregate, providing food for bats. Epidemic spruce beetle kill trees would be reduced given silvicultural treatment, providing for future forest health and foraging habitat for bats. The removal of trees along the pipeline corridor and during the vegetation treatment would open dense forests up to ground vegetation providing diversity in vegetation. The greater limiting factor, however, would likely be the lack of caves, mines, and rock cliffs in the area used for nesting and roosting. Potential improvements to the water tunnel (separate project) would likely cause disturbance to roosting bats that occupy the tunnel. Noise disturbance during construction would occur during daylight hours, minimizing impacts to this species, which is active at night.

The limiting factor for this species is most likely the lack of rock crevices and caves. Therefore, disturbance to the water tunnel would likely be the greatest contributor to cumulative effects. At a large scale, the closing of mines in South Cottonwood and elsewhere in the area would reduce maternity roosts. However, in canyon country, rock crevices are abundant on a district-wide basis. Nonetheless, site-specific bat populations may be impacted by large-scale closure of roosts.

No roost areas (rock crevices or caves) are proposed for closure under this analysis. Conclusion: No impact to spotted or Townsend's big-eared bat populations.

### **Management Indicator Species (MIS) and Other Species of Interest**

*Other Issue - Implementation of proposed activities may affect golden eagle, other raptors, blue grouse, macroinvertebrates, Abert squirrel, neotropical birds, or cavity-dependent bird populations:*

These species have been considered. The M-B Watershed Specialist's Report – Wildlife & Plants in the planning record (USDA Forest Service 2003. Musclow, Heather and Smith, Barbara. *M-B Watershed Specialist's Report – Wildlife & Plants*. January.) provides detailed information and references for each species. A summary of information regarding these other MIS and special interest species and potential effects follows:

#### **Abert squirrel – MIS**

The Abert squirrel (*Sciurus albertii*) is the indicator species most directly dependent on ponderosa pine habitat on both the Moab and Monticello districts. They nest in ponderosa pine and feed on pine seeds, bark, buds, flowers and fungi that grows in association with mature ponderosa pine trees. The Forest Plan provides specific guidelines for managing habitat for this species.

Studies for Abert's squirrels have occurred on both the Moab and Monticello districts. On the Monticello portion of the district, studies have occurred in 1986,

1987, 1992, and 1993. A current study began in 2001 and will continue through 2003. The current study includes four survey grids on Elk Ridge and three on the Abajo Mountains. All grids showed the presence of Abert squirrels.

Approximately 1,465 acres of Ponderosa Pine vegetation community falls within the project area. Of this, 1,045 acres is considered mature or large-mature, the preferred forest structure for Abert squirrels. Little effect from the vegetation treatment should occur to this vegetation type. Portions of the re-routed pipeline do, however, occur in this forest type. This means a pathway around 25' wide would be cut through the forest, reducing habitat suitability for Abert squirrels within the corridor.

#### **Golden Eagle - MIS**

Golden eagles (*Aquila chrysaetos*) breed across western North America from Alaska south to northern Mexico. Most golden eagles are year-round residents of the same area, except for those occupying northern ranges. They are considered a common resident in Utah. Typically found in open country, they nest on cliffs or in trees. They feed mainly on small mammals, especially rabbits, prairie dogs, ground squirrels as well as insects, snakes, birds and juvenile ungulates. Nesting pairs are monogamous, often using the same nest in consecutive years.

Golden eagles can be found in southeast Utah any time of the year. They often congregate in fields feeding on dead livestock or big game. Jimmie Forrest, rangeland management specialist on the Monticello/Moab district since 1966 stated: *I have over the years also made sightings of both Golden and Bald eagles in the area (Monticello-Blanding watershed). Sometimes they have been perched on dead snags in the area, on other occasions I've seen them flying over the area.* No eagle eyries have been located in or near the project area during surveys. It is suspected that eagles observed in the area come from nesting sites along the cliffs at lower elevations.

Changes in spruce habitat in the project area can result in changes in prey species and availability for golden eagles. As spruce trees die and the forest floor opens, rodents that depend on greater ground vegetation for cover benefit. The change in prey species, however, is not expected to have any overall impacts on foraging for eagles since they are opportunistic feeders...preying on what is available. Gopher control (baiting) is planned to protect new tree plantings. A golden eagle could consume a treated gopher, however gopher control would utilize underground methods to prevent eagle and gopher interaction. Treatment of gophers would only occur where needed to re-establish new tree seedlings.

Proposed projects will not affect the habitat or population of golden eagles.

Conclusion: No impact.

**Blue Grouse - MIS**

Blue grouse (Dendragapus obscurus) are considered a forest grouse, moving up in elevation from conifer/aspen and mountain brush summer range to dense, mature spruce/fir forest in the winter. Open stands of conifer or aspen with an understory of brush are preferred habitat. In spring, birds move to lower meadow/brush or open timber areas for mating.

Blue grouse are found in most mountainous areas of the Utah, however, the greatest densities occur in the northern Wasatch range. While the over-all population is healthy on a statewide basis, annual population fluctuations are primarily the result of seasonal weather patterns. Cool wet springs, dry summers, and harsh winters depress blue grouse production. Unlike other grouse species, the historic habitat of blue grouse has remained relatively unchanged, allowing populations of this species to remain relatively stable.

The last Upland Game Annual Report, published by the Utah Division of Wildlife Resources was in 1999 (Pub. #00-27). Their finding state “The 1999 brood count surveys on blue grouse indicated that production increased 19 percent from 1998 and was 9 percent above average. This data is collected opportunistically. Surveys show fluctuations with 1993 being a peak year. When looking at the long range, blue grouse populations have increased over time.

Analysis of alternatives which allow timber harvest (B and C) indicate that loss of large trees from silviculture treatment would open the forest floor and allow for shrubs, forbs and grass to encroach. This would improve forage and nesting habitat availability while reducing thermal cover and roosting trees. The ratio of cover:forage, however, would be improved since it is primarily only thermal cover now. The operating season for timber harvest is July 5 – October 15, no disturbance will occur during the nesting season (April 20 – July 1). Conclusion: No impact.

**Merriam's Turkey – Species of Special Interest**

Merriam's turkeys are associated with ponderosa pine, often mixed with a variety of other vegetation including pinyon-juniper, oak, and aspen. The major contribution of these mixed woodland types is the production of mast in the form of juniper berries, pinyon nuts, grass seeds, and acorns. All are utilized as food for turkeys. The important habitat component of horizontal cover is provided by slash, shrubs, and rock outcrops, which are used for hiding and nest cover. Ponderosa pine is the most common roost tree species and an essential habitat requirement of these birds.

Wild turkeys are not known to have existed in Utah during early white settlement. However, historical and archeological evidence suggests that wild turkeys co-existed with Native Americans. Merriam's turkeys have been transplanted onto both the Moab and Monticello portions of the district several times and transplants continue depending on need. Winters in southeast Utah seem to be the greatest limiting factor for these birds.

Although some short-term disturbance may occur during implementation of proposed project activities, primarily pipeline reconstruction, no ponderosa pine, and associated habitat will be disturbed by timber harvest activities. Lower elevation aspen treatments will benefit turkey habitat by increasing forage production. No major impacts to Merriam's turkey or habitat would occur. Conclusion: No impact.

**Cavity Nesting/Neotropical Migrant Birds - Species of Special Interest**

Neotropical migratory birds are species that nest, raise young in North America, and migrate to tropical areas in Mexico, the Caribbean, and Central and South America in the winter. Habitat requirements of neotropical migratory birds differ by species. For most wildlife species, the greater the diversity in both vertical and horizontal habitat structure, the greater the diversity of wildlife. Changes in vegetation that affect neotropical migratory birds include alteration of species composition, changed vegetation density and vertical/horizontal structure, and reduced cover allowing increased predation and/or parasitism by brown-headed cowbirds.

Riparian woodlands are habitats that provide the highest diversity and abundance of Neotropical migratory birds. Therefore, management of riparian ecosystems has a high potential for significantly affecting many Neotropical migrants. Birds typically found in riparian vegetation on the Moab/Monticello Ranger District include American robin, broad-tailed hummingbird, chipping sparrow, dusky flycatcher, green-tailed towhee, and magnolia warbler.

The most abundant vegetation type along the lower benches of the Moab/Monticello Ranger District is pinyon/juniper. At mid elevations, mountain brush dominates along with scattered patches of sagebrush/grasslands. Several bird species, such as the mourning dove, common nighthawk, black-chinned hummingbird, Say's phoebe, dusky flycatcher, and violet green swallow, use both of these vegetation types.

Higher elevations become more wooded with ponderosa pine, aspen, mixed conifer, and spruce fir. Ponderosa pine habitat commonly supports American robin, broad-tailed hummingbird, chipping sparrow, dusky flycatcher, gray-headed junco, green-tailed towhee, pygmy nuthatch, rufous-sided towhee, and Virginia's warbler. Aspen vegetation types support American robin, gray-headed junco, Cassin's finch, house wren, hermit thrush, pine siskin, red-shafted flicker, tree swallow, warbling vireo, and yellow-rumped warbler. Rufous-sided towhee, gray-headed juncos, and other birds typically occupy mixed-conifer habitats, but none in great abundance. Finally, the spruce-fir forest is home to American robin, brown creeper, Cassin's finch, chipping sparrow, gray-headed junco, hermit thrush, mountain chickadee, pine siskin, red crossbill, ruby-crowned kinglet, Steller's jay, pygmy nuthatch, and yellow-rumped warbler.



The Abajo Mountains contain a variety of forested types that provide suitable habitat for Neotropical migrants. The project area, like the entire mountain, exhibits natural habitat fragmentation with some human influence. Typically, large to small continuous forest types with large and small open parks are scattered through the area. Forest types range from 5-acre to 300-acre continuous tree stands. Natural conditions such as beetle outbreaks are rapidly altering the habitat, especially for forest interior species dependant on thick forest stands. The continued threat of stand-replacing fire is a concern for species that depend on large tracts of continuous forest.

Dead trees (snags) provide tree cavity habitat. All alternatives would continue to provide an abundance of tree cavity habitat through design features that maintain snags in treatment areas (northern goshawk guidelines) and through adjacent untreated areas. Minimal vegetation treatments and effects to neotropical/migrant and cavity nesting birds will occur in the lower pinyon/juniper, mountain brush, grass/sage, and ponderosa pine areas where pipeline reconstruction is the primary disturbance factor.

Declines in interior forest species would occur with each alternative, due to either the natural loss of spruce trees from spruce beetle infestation or from silvicultural treatments. Because of the small area being affected within the watershed at this time, none of the alternatives should threaten the overall population viability of Neotropical migratory birds. Spruce beetles, silvicultural treatments, or both open the forest floor in all alternatives. This will favor the existence of Neotropical migratory birds that prefer open forest ecosystems. By either letting the trees die or harvesting them, habitat fragmentation for Neotropical birds may occur on a localized basis for those species dependent on continuous dense mature forests. Since the watershed area provides a large continuous expanse of dense mature forest, opening the canopy in areas may also add habitat diversity, which would benefit many Neotropical bird species.

Reconstruction of the collection and conveyance system for Monticello City has potential to dewater some seeps and streams. Removing this water can impact the use of the stream corridor by wildlife, including Neotropical migratory birds. Not only does the water meet a basic need of the animal itself, but it also provides for the insects that many birds feed on. Design features to provide water (maintenance and construction of troughs, installation of guzzlers, overflows for periods of good water, and line meters to monitor flow/output) are included to mitigate. However, these measures may not fully mitigate the removal of water for culinary uses.

## **SOCIAL/ECONOMIC FACTORS**

### **Economics**

*Other Issue - Two aspects of economics were raised during review of the proposed action. These include:*

***Economic Feasibility*** – *The timber portion of the project may not be economically feasible.*

***Local Economy*** - *The local economy may be affected by the proposed action or no action.*

**Economic Feasibility**

A meeting was held July 2000 with prospective timber sale purchasers to determine if there was interest in a commercial timber sale within the analysis area (see project record) before any NEPA was started on this project. The timber sale representatives overall agreed that a commercial timber sale was feasible if there was no associated road work since the amount of helicopter yarding would not justify road construction or much reconstruction. Since then, San Juan County has agreed to complete a substantial amount of road reconstruction and the project does not include any construction of any permanent roads associated with the removal of timber. A detailed economic information and analysis of the timber harvesting activities is included in the planning record (USDA Forest Service 2002. Jones, Doug, Economics report. January 2003).

**Local Economy and Effects On Minority Populations And Low-Income Populations**

The Forest Plan Final Environmental Impact Statement includes a social-economic analysis for effects of timber harvest on communities surrounding the National Forest (USDA Forest Service 1986. *Final Environmental Impact Statement Manti-La Sal National Forest*. Pages III-15 to III-16 and IV-6 to IV-15). The analysis area for this project includes San Juan County. Each alternative has non-amenity costs and benefits, which are difficult to accurately model. Non-amenity costs and benefits are beyond the scope of this analysis and will not be analyzed. The project record includes the San Juan County Economics Base Study (Snyder, Donald L., Christopher Fawson, and James D. Keyes, 1995. *Economic Base Study San Juan County*). Excerpts from this study are included in the planning record (USDA Forest Service 2003. Montgomery, Greg T. *White Paper on Economics*).

## AIR QUALITY

***Other Issue*** – *Air Quality may be affected by proposed actions:*

The Clean Air Act of 1970 and the 1977 and 1990 amendments are the primary legislative tools for maintaining and improving air quality in the United States. The Act established varying levels of air quality protection for Class I, II, or III areas.

**Class I Area** – All international and national parks greater than 6,000 acres, and national wilderness areas greater than 5,000 acres, which existed as of August 7, 1977. This class provides the most protection to pristine lands by severely limiting the amount of additional human-caused air pollution that can be added to these areas.

Class II Area – All other areas of the county, unless updated to Class I. A greater amount of additional human-caused air pollution may be added to these areas. All Forest Service lands which are not designated as Class I are Class II.

Class III Area – Areas having the least amount of regulatory protection from additional air pollution. To date, no Class III areas have been designated anywhere in the country.

Attainment Areas – those areas that meet national air quality standards.

Non-attainment Areas – those areas that do not meet national air quality standards.

The Manti-La Sal National Forest is a Class II airshed. The 1990 amendment promulgated a general conformity rule (40 CFR 51 and 93) directing Federal agencies to ensure Federal actions do not interfere with achieving the goals and objectives in State Implementation Plans for non-attainment areas. Forest activities producing smoke or resulting in incremental increases in vehicle use (tail-pipe emissions) and/or dust from road use or highway sanding may come under the matter (dust, dirt, soot, smoke, and liquid droplets). The air quality standard for particulate matter focuses on materials with diameters smaller than 10 micrometers PM<sub>10</sub>. The Forest Plan (p. III-43) also requires that all projects meet State and Federal air quality objectives.

States have the primary responsibility for air quality management, which they carry out through implementation plans. The provisions and permitting processes of the State Smoke Management Plan require the State Program Coordinator to consider project size and projected emissions, proximity to Class I and non-attainment areas, and weather conditions when issuing a burning permit and scheduling ignitions, including final go/no go decisions. Control strategies focus on industry, solid fuel and wood burning devices, inspection and maintenance of diesel trucks, and control of road salting and sanding.

High winds are common and dispersion in the mountainous terrain of the project area is typically very good. However, calm periods do occur which allow smoke or engine emissions to settle nearby and even to drift down slope towards the valleys. The prevailing wind direction is from the southwest towards the northeast. Monticello is within 1 mile directly east of the project area. The community of La Sal is within 30 miles of the project area to the northeast. Canyonlands National Park (Class I) lies northwest within 20 miles. Dark Canyon Wilderness (Class II) is about 16 miles to the west. San Juan County is classed as Attainment. The designated Class I Area (Canyonlands National Park) that is near the project area is not within the prevailing wind pattern and would not be affected by the proposal, except during unusual wind events.

Petroleum-based equipment used to implement proposed activities in the action alternatives would generate emissions. The concentration would vary by type of fuel, fuel consumption, and the number of engines. Because of Federal and State laws regulating emissions, standard equipment requirements, the projects location, and high elevation air dispersal, no adverse effects from engine emissions are expected and emissions have not been modeled.

Timber harvest operations, road construction, road use, and water system reconstruction operations would create dust. These effects would be localized to the immediate area and time of disturbance. Dust abatement of the native-surface, graveled roadways, or construction corridors would be the responsibility of the timber sale purchaser, road construction contractor, or special use permittee as needed for resource protection or public safety. This requirement is included in the design features of the action alternatives. Dust has not been modeled in this analysis due to its localized nature, short duration, and the potential to abate.

The action alternatives include burning of slash piles and jackpot burning for reduction of fuel loads and site preparation in openings and regeneration/reforestation areas. All burning must comply with the procedures and requirements in the State Smoke Management Plan. The State Program Coordinator must approve burning permits and may reschedule a proposed burn to manage local, area, or statewide emissions. Monitoring and design features (see Appendix A) that incorporate the requirements of the Manti-La Sal National Forest Smoke Management Guidelines for Prescribed Fires (USDA Forest Service 1992. *Manti-La Sal National Forest Smoke Management Guidelines for Prescribed Fires*) is included in the action alternatives. These design features implement State requirements for management of air quality, which follow the mandate of the Clean Air Act. Due to the potential to meet the State requirements during prescribed burning, smoke emissions have not been modeled. An analysis of the type and amount of fuel reduction treatments (slash burning) is included in the analysis of the Forest Vegetation Issue.

The Manti-La Sal National Forest analyzed air Quality for the *South Manti Timber Salvage Final Environmental Impact Statement* (USDA Forest Service, 2000. *South Manti Timber Salvage Final Environmental Impact Statement*. Pp. 4-2 to 4-4 and 4-93). The analysis determined that all alternatives analyzed (alternatives included timber harvest, road construction activities, and associated slash treatment) would be consistent with Forest Plan direction to meet State and Federal air quality objectives. Consistency is based upon compliance with the State Smoke Management Plan and use of the Manti-La Sal Smoke Management Guidelines for Prescribed Fire. Similar effects are expected if Monticello & Blanding Municipal Watershed Improvement Projects alternatives are implemented. Implementation of design features identified in Appendix A for management of air quality will be consistent with Forest Plan direction to meet State and Federal air quality objectives.